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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,217	07/31/2001	Jeffrey D. Sanders	A998	4597

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EXAMINER	
KUMAR, PANKAJ	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 12/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/919,217	SANDERS, JEFFREY D.	
	Examiner	Art Unit	
	Pankaj Kumar	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-14 and 16-20* is/are rejected.

7)☒ Claim(s) *5 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/31/2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 6-14, 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang 6,407,699. Here is how the reference teaches the claims:

3. As per claim 1: A method for determining data bit transition times for an incoming signal having data bits modulated by a known repeating code having a known code time period, said data bits having a known data bit time period, comprising: integrating (Yang col. 12 line 62: integration) said incoming signal (Yang fig. 1: 12) using first through Nth assumed said data bit transition times for providing first through Nth integrations (Yang col. 12 lines 63-65: " ... the boundary of every 1ms is known. Since each data bit interval is 20 ms, one simple way to achieve the bit sync is to run in parallel twenty moving sums of 20 ms long ..."; fig. 3: 1st through 4th buffers), respectively; and determining actual said data bit transition times from a certain one of said first through Nth assumed data bit transition times corresponding to a largest one of said first through Nth integrations (Yang col. 13 lines 1-3: "The running sum that has consistently the largest absolute value represents a synchronized data bit interval."; col. 12 lines 63-65: "The data bit transition is then determined in a bit sync process 112.").

4. Yang teaches 4 buffers in fig. 3 and suggests 20 buffers (Yang col. 12 lines 63-65: " ... the boundary of every 1ms is known. Since each data bit interval is 20 ms ...") but Yang does

not teach N buffers. It is common knowledge to change the number of buffers. It would have been obvious, to one of ordinary skill in the art, at time the invention was made, to modify the prior art teaching of Yang by replacing 4 buffers or 20 buffers with N buffers as recited by the instant claims, because Yang suggests multiple buffers in the analogous art of data bit transitions for spread spectrum signals.

5. As per claim 2: The method of claim 1, wherein: said N (Yang col. 12 line 63 to col. 13 line 1: " ... the boundary of every 1ms is known. Since each data bit interval is 20 ms, one simple way to achieve the bit sync is to run in parallel twenty moving sums of 20 ms long each started 1ms later than its predecessor") is about equal to said data bit time period (Yang col. 11 line 61: "one data bit interval (20ms)") divided by said code time period (Yang col. 1 lines 57-58: "A C/A code sequence is 1 ms long").

6. As per claim 3: The method of claim 1, wherein: integrating comprises accumulating for one or more accumulation time periods, each of said accumulation time periods about equal (Yang col. 12 line 63 to col. 13 line 1: " ... the boundary of every 1ms is known. Since each data bit interval is 20 ms, one simple way to achieve the bit sync is to run in parallel twenty moving sums of 20 ms long each started 1ms later than its predecessor") to said data bit time period (Yang col. 11 line 61: "one data bit interval (20ms)").

7. As per claim 4: The method of claim 1, wherein: integrating comprises accumulating during accumulation time periods having staggered first through Nth start times for providing said first through Nth integrations, respectively, an Mth one of said start times later than an llth one of said start times by said data bit time period divided by said N; and determining said actual data bit transition times comprises determining said actual data bit transition times from a certain

one of said first through Nth start times resulting in said largest one of said first through Nth integrations (discussed above with Yang such as in col. 12 line 63 to col. 13 line 1: " ... the boundary of every 1ms is known. Since each data bit interval is 20 ms, one simple way to achieve the bit sync is to run in parallel twenty moving sums of 20 ms long each started 1ms later than its predecessor"; Yang col. 11 line 57 to col. 13 line 7).

8. As per claim 6: The method of claim 1, wherein: integrating comprises repetitively determining first through Nth unsigned accumulation values for said first through Nth assumed data bit transition times, respectively, for a certain number of repetitive accumulation time periods for determining first through Nth multibit unsigned accumulation values, respectively; and determining said first through Nth integrations from said first through Nth multibit unsigned accumulation values, respectively (all limitation except for unsigned limitations are discussed above such as in Yang col. 11 line 57 to col. 13 line 7). What Yang does not teach is that the accumulation is unsigned. It is common knowledge that if signed accumulation is not stated, signed accumulation does not exist and hence if accumulation exists, it would be unsigned. It would have been obvious, to one of ordinary skill in the art, at time the invention was made, to modify the prior art teaching of Yang by replacing predefined format col. 13 line 6 with an unsigned format as recited by the instant claims, because Yang does not suggest anything about having signed data in the analogous art of data bit transitions for spread spectrum signals.

9. As per claim 7: The method of claim 1, wherein: said actual data bit transition determining said data bits times are used for determining said data bits (discussed above such as in Yang col. 11 line 57 to col. 13 line 7).

10. As per claim 8: The method of claim 1, wherein: said actual data bit transition times are used for tracking said incoming signal (discussed above such as in Yang col. 11 line 57 to col. 13 line 7).

11. As per claim 9: The method of claim 1, wherein: said N (Yang: 4 buffers in fig. 3; col. 12 line 63 to col. 13 line 1: " ... the boundary of every 1ms is known. Since each data bit interval is 20 ms, one simple way to achieve the bit sync is to run in parallel twenty moving sums of 20 ms long each started 1ms later than its predecessor") is in a range between two and said data bit time period (Yang col. 11 line 61: "one data bit interval (20ms)") divided by said code time period (Yang col. 1 lines 57-58: "A C/A code sequence is 1 ms long"), inclusively.

12. As per claim 17: The apparatus of claim 11, further comprising: a navigation processor (Yang col. 1 line 33: GPS) for using said actual data bit transition times for determining said data bits (remainder discussed above).

13. Claims 10-14, 16, 18-20 are discussed above with respect to other claims.

Allowable Subject Matter

14. Claims 5 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (571) 272-3011. The examiner can normally be reached on Mon, Tues, Thurs and Fri after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PK